

REMARKS

Claims 1-27, 29-33, and 53-55 are pending. Claim 29 has been amended. Claim 1, 4, 7, 9, 11, and 21-23 have been previously presented. Claims 2, 3, 5, 6, 8, 10, 12-20, 24-27, and 30-33 are original. Claims 28 and 34-52 have been canceled. Claims 53-55 are new. No new matter has been introduced by the amendment, and no new issues have been presented by the amendment. Claim 29 have been amended and new claims 53-55 have been added to overcome the objection to claim 29.

1. Claim Objections, And Rejections under 35 U.S.C. § 112

Claim 29 has been objected to because of informalities. Claim 29 has been rejected under 35 U.S.C. §112, second paragraph because claim 29 is dependent from canceled claim 28. Claim 29 has been amended to depend from independent claim 9. Accordingly, the Applicants respectfully submit that the objections and rejections again claim 29 have been overcome and should be withdrawn.

2. Claim Rejections under 35 U.S.C. § 103(a)

A. Claims 1-8

Claims 1-8 have been rejected under 35 U.S.C. §103(a) over McEntee et al. (U.S. Pat. Pub. No. 2004/0050701) in view of Paolini et al. (U.S. Pat. Pub. No. 2002/0131147). The Applicants respectfully traverse the rejections based on the following remarks.

McEntee teaches selective deposition from ionized droplets. While McEntee stretches its definition of ionized droplets to include a form of an emulsion, McEntee does not teach the use of a surfactant in such an emulsion, as the Examiner has conceded (Office Action, pages 4 and 6). Further, in paragraph [0097] of McEntee,

to which the Examiner has referred us, there is no teaching of use of any surfactant that does not significantly reduce the electrical conductivity of the insulative continuous phase. McEntee does not address the issue of, for instance, the use of an insulative continuous phase that could prevent the aqueous reactant discontinuous phase from wetting and subsequently depositing on the required site because of the lack of surfactant. Accordingly, the Applicants respectfully submit that McEntee teaches away from the use of any surfactant in its ionized droplets.

Further, there is no reason to combine McEntee with Paolini, and the alleged combination uses impermissible hindsight. The Examiner asserts that an emulsion comprising a surfactant having a first part which is compatible with the continuous phase and a second part which is compatible with the discontinuous phase and not significantly reducing the volume resistivity of the continuous phase was known in the art at the time of the claimed invention was made as taught by Paolini (Office Action, page 6). Paolini, however, is for a quite different purpose, to form an electrophoretic display (see paragraph [0004], lines 1-6). While Paolini uses an emulsion, there is no teaching or suggestion that such a material could be used for selective deposition. In fact, the emulsion material disclosed in Paolin is in the form of a gel and is placed over the entire surface, and once the gel has set, charge on the substrate enables particles in droplets suspended in the set gel to realign to give visible patterns (see paragraph [0020], lines 1-20).

Also, Paolini uses a gel emulsion where the continuous phase is water and materials dissolved in the continuous phase such as gelatine, polyvinyl alcohol etc that forms a continuous film when spread on a substrate (see paragraph [0022]). Paolini explicitly teaches dispersing a range of polymers in the continuous phase.

“Aqueous external phases in this process may include dispersion polymers, such as lattices, urethane dispersions, silicones and epoxies, and solution polymers such as poly(vinyl alcohol) and

polyvinylpyrrolidone. Film-forming materials which may be useful include lower consolute temperature polymers such as N-isopropylacrylamide, and highly shear thinning, high low-shear viscosity polymers such as gums, xanthan, carageenan, associative thickeners, and cellulosic gelling agents, which may also form the continuous phase matrix. Silicone polymers may be used in the continuous phase where stability of the medium is of major concern. Also, the continuous phase may comprise a pressure-sensitive adhesive to improve adhesion of the electrophoretic medium to the substrate." (See paragraph [0039]).

In other words, the gel disclosed in Paolini is an aqueous gel which is not an electrically insulative continuous phase, as required by independent claims 1, 4, and 7. See also paragraphs [0022], [0023] and [0024] of Paolini.

Accordingly, the Applicants respectfully submit that there is no link between Paolini and the other cited references, and no reason to combine McEntee and Paolini. Once the Examiner has learned of surfactants and charged emulsions and formation of solid phase arrays, the Examiner was able to combine the teachings from the cited reference, but only upon impermissible hindsight.

In view of the above remarks, the Applicants respectfully submit that McEntee in view of Paolini do not teach or suggest all the claimed limitations as recited in independent claims 1, 4 and 7; that there is no reason to combine McEntee and Paolini except impermissible hindsight; and that McEntee teaches away from the use of surfactant in an emulsion. Accordingly, the rejections against independent claims 1, 4, and 7, and thus the rejections against claims 2-3, and 5, 6, 8, which all depend from independent claims 1 and 4, respectively, are improper and should be withdrawn.

New claims 53-55 depend from independent claims 1, 4, and 7, respectively, and thus should be patentable as well. Support for new claims 53-55 can be found in Applicants' specification, for example, in original claim 29.

B. Claims 9-27 And 29-33

Claims 9-27 and 29-33 have been rejected under 35 U.S.C. §103(a) over McEntee in view of Montgomery (U.S. Pat. No. 6,280,595) further in view of Paolini. The Applicants respectfully traverse the rejections based on the following remarks.

As discussed in section 2A above, McEntee and Paolini do not teach or suggest any surfactant having a first part which is compatible with the continuous phase and a second part which is compatible with the discontinuous phase, and not significantly reducing the volume resistivity of the continuous phase as recited in independent claim 9. There is no reason to combine McEntee and Paolini except impermissible hindsight. McEntee teaches away from the use of surfactant in an emulsion. Montgomery does not overcome the deficiencies of McEntee and Paolini since Montgomery does not teach or suggest the use of any surfactant in an emulsion.

Further, there is no reason to combine Montgomery with McEntee and Paolini. Montgomery teaches solid phase electro-chemical synthesis from an aqueous solution onto electrodes on a substrate with the electrodes set up in a particular pattern (see Abstract). There is no teaching or suggestion that anything other than a solution of the necessary chemical can be used to selectively deprotect these electrode sites for deposition of the solid phase chemicals. The solutions contemplated in Montgomery are aqueous (see Column 12, lines 1 to 15). This specifically teaches away from the invention and the claimed property of being an electrically insulative continuous phase.

In view of the above remarks, the Applicants respectfully submit that McEntee in view of Montgomery and further in view of Paolini do not teach or suggest all the claimed limitations as recited in independent claim 9. Accordingly, the rejections against independent claim 9, and thus the rejections against claims 10-27 and 29-33, which all depend from independent claim 9, are improper and should be withdrawn.

3. Conclusion

Based on the above amendments and remarks, the Applicants respectfully submit that the claims are in condition for allowance. The examiner is kindly invited to contact the undersigned agent to expedite allowance.

Respectfully submitted,

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